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DATE: Thursday, April 21, 2005

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☐	L10	L9 and (scanning solution)	1
☐	L9	L8 and droplet	72
☐	L8	L7 and tilte$	515
☐	L7	L6 and (semiconductor wafer)	5250
☐	L6	L5	149366
☐	L5	(edge or perimeter or rim or circum$ or pher$) and scanning	149366
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☐ 21. Document ID: US 20040207836 A1

Using default format because multiple data bases are involved.

L9: Entry 21 of 72 File: PGPB Oct 21, 2004

PGPUB-DOCUMENT-NUMBER: 20040207836
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040207836 A1

TITLE: High dynamic range optical inspection system and method

PUBLICATION-DATE: October 21, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Chhibber, Rajeshwar	San Jose	CA	US	
Willenborg, David	Pleasanton	CA	US	

US-CL-CURRENT: 356/237.4

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De

☐ 22. Document ID: US 20040206452 A1

L9: Entry 22 of 72 File: PGPB Oct 21, 2004

PGPUB-DOCUMENT-NUMBER: 20040206452
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040206452 A1

TITLE: Substrate processing apparatus

PUBLICATION-DATE: October 21, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Okuda, Seiichiro	Kyoto		JP	
Sugimoto, Hiroaki	Kyoto		JP	
Kuroda, Takuya	Kyoto		JP	
Sato, Masanobu	Kyoto		JP	
Hirae, Sadao	Kyoto		JP	
Yasuda, Shuichi	Kyoto		JP	

Morinishi, Kenya	Kyoto	JP
Imai, Masayoshi	Kyoto	JP

US-CL-CURRENT: 156/345.11

ABSTRACT:

The substrate processing apparatus is provided with a gas-liquid mixing nozzle for generating a process liquid mist by mixing a liquid and a pressurized gas, to discharge the process liquid mist to a substrate at high speeds. The liquid may be remover liquid, intermediate rinse liquid or deionized water. The reaction products which having been generated on the substrate in etching process is removed at high speeds with the flow of the mist, whereby the quality of the process is improved.

☐ 23. Document ID: US 20040206379 A1

L9: Entry 23 of 72 File: PGPB Oct 21, 2004

PGPUB-DOCUMENT-NUMBER: 20040206379
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040206379 A1

TITLE: Substrate processing apparatus

PUBLICATION-DATE: October 21, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Okuda, Seiichiro	Kyoto		JP	
Sugimoto, Hiroaki	Kyoto		JP	
Kuroda, Takuya	Kyoto		JP	
Sato, Masanobu	kyoto		JP	
Hirae, Sadao	Kyoto		JP	
Yasuda, Shuichi	Kyoto		JP	
Morinishi, Kenya	Kyoto		JP	
Imai, Masayoshi	Kyoto		JP	

US-CL-CURRENT: 134/102.1; 134/144, 134/153, 134/902, 134/95.3

ABSTRACT:

The substrate processing apparatus is provided with a gas-liquid mixing nozzle for generating a process liquid mist by mixing a liquid and a pressurized gas, to discharge the process liquid mist to a substrate at high speeds. The liquid may be remover liquid, intermediate rinse liquid or deionized water. The reaction products which having been generated on the substrate in etching process is removed at high speeds with the flow of the mist, whereby the quality of the process is improved.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw. D

24. Document ID: US 20040206378 A1

L9: Entry 24 of 72 File: PGPB Oct 21, 2004

PGPUB-DOCUMENT-NUMBER: 20040206378
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040206378 A1

TITLE: Substrate processing apparatus

PUBLICATION-DATE: October 21, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Okuda, Seiichiro	Kyoto		JP	
Sugimoto, Hiroaki	Kyoto		JP	
Kuroda, Takuya	Kyoto		JP	
Sato, Masanobu	Kyoto		JP	
Hirae, Sadao	Kyoto		JP	
Yasuda, Shuichi	Kyoto		JP	
Morinishi, Kenya	Kyoto		JP	
Imai, Masayoshi	Kyoto		JP	

US-CL-CURRENT: 134/56R; 134/100.1, 134/148, 134/153, 134/184, 134/902, 134/95.1

ABSTRACT:

The substrate processing apparatus is provided with a gas-liquid mixing nozzle for generating a process liquid mist by mixing a liquid and a pressurized gas, to discharge the process liquid mist to a substrate at high speeds. The liquid may be remover liquid, intermediate rinse liquid or deionized water. The reaction products which having been generated on the substrate in etching process is removed at high speeds with the flow of the mist, whereby the quality of the process is improved.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw. D

25. Document ID: US 20040200513 A1

L9: Entry 25 of 72 File: PGPB Oct 14, 2004

PGPUB-DOCUMENT-NUMBER: 20040200513
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040200513 A1

TITLE: Substrate processing apparatus

PUBLICATION-DATE: October 14, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Okuda, Seiichiro	Kyoto		JP	
Sugimoto, Hiroaki	Kyoto		JP	
Kuroda, Takuya	Kyoto		JP	
Sato, Masanobu	Kyoto		JP	
Hirae, Sadao	Kyoto		JP	
Yasuda, Shuichi	Kyoto		JP	
Morinishi, Kenya	Kyoto		JP	
Imai, Masayoshi	Kyoto		JP	

US-CL-CURRENT: 134/102.1; 134/153, 134/172

ABSTRACT:

The substrate processing apparatus is provided with a gas-liquid mixing nozzle for generating a process liquid mist by mixing a liquid and a pressurized gas, to discharge the process liquid mist to a substrate at high speeds. The liquid may be remover liquid, intermediate rinse liquid or deionized water. The reaction products which having been generated on the substrate in etching process is removed at high speeds with the flow of the mist, whereby the quality of the process is improved.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw D

26. Document ID: US 20040189996 A1

L9: Entry 26 of 72 File: PGPB Sep 30, 2004

PGPUB-DOCUMENT-NUMBER: 20040189996
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040189996 A1

TITLE: Method of aligning a template with a substrate employing moire patterns

PUBLICATION-DATE: September 30, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Sreenivasan, S. V.	Austin	TX	US	
Choi, Byung J.	Round Rock	TX	US	
Colburn, Matthew	Hopewell Junction	NJ	US	
Bailey, Todd	Fishkill	NY	US	

US-CL-CURRENT: 356/401

ABSTRACT:

The present invention includes a method of determining an alignment between a substrate and a template spaced-apart from the substrate and having a distance defined therebetween, the substrate having a first pattern disposed thereon and the

template having a second pattern disposed thereon, the method including, sensing the first and the second pattern, with the distance being established such that the first and the second pattern form a desired moir pattern when the template and the substrate are in a desired spatial relationship.

27. Document ID: US 20040189994 A1

L9: Entry 27 of 72 File: PGPB Sep 30, 2004

PGPUB-DOCUMENT-NUMBER: 20040189994
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040189994 A1

TITLE: Method of determining alignment of a template and a substrate having a liquid disposed therebetween

PUBLICATION-DATE: September 30, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Sreenivasan, S. V.	Austin	TX	US	
Choi, Byung J.	Round Rock	TX	US	
Colburn, Matthew	Hopewell Junction	NY	US	
Bailey, Todd	Fishkill	NY	US	

US-CL-CURRENT: 356/399; 356/400, 430/22

ABSTRACT:

The present invention includes a method of aligning a substrate and a template spaced-apart from the substrate with an activating light curable liquid disposed therebetween, the substrate having substrate alignment marks and the template having template alignment marks, the method including, reducing a distance between the substrate and the template to cause a spreading of the activating light curable liquid; and varying an overlay placement of the template with respect to the substrate such that the template alignment marks are substantially aligned with the substrate alignment marks before the spreading causes the activating light curable liquid to cover an area between the substrate alignment marks and the template alignment marks.

28. Document ID: US 20040170771 A1

L9: Entry 28 of 72 File: PGPB Sep 2, 2004

PGPUB-DOCUMENT-NUMBER: 20040170771
PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040170771 A1

TITLE: Method of creating a dispersion of a liquid on a substrate

PUBLICATION-DATE: September 2, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Bailey, Todd	Fishkill	NY	US	
Choi, Byung J.	Round Rock	TX	US	
Colburn, Matthew	Hopewell Junction	NY	US	
Sreenivasan, S. V.	Austin	TX	US	
Willson, C. Grant	Austin	TX	US	
Ekerdt, John	Austin	TX	US	

US-CL-CURRENT: 427/421.1

ABSTRACT:

The present invention includes a method of moving a liquid between a substrate extending in a first plane and a template extending in a second plane. More specifically, the method may include forming an oblique angle between the first plane and the second plane, reducing a distance between the substrate and the template such that the template is in contact with a portion of the liquid at a desired location, and creating a dispersion of the liquid away from the desired location.

29. Document ID: US 20040168586 A1

L9: Entry 29 of 72 File: PGPB Sep 2, 2004

PGPUB-DOCUMENT-NUMBER: 20040168586
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040168586 A1

TITLE: Imprint lithography template having a feature size under 250 nm

PUBLICATION-DATE: September 2, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Bailey, Todd	Fishkill	NY	US	
Choi, Byung J.	Round Rock	TX	US	
Colburn, Matthew	Hopewell Junction	NY	US	
Sreenivasan, S.V.	Austin	TX	US	
Willson, C. Grant	Austin	TX	US	
Ekerdt, John	Austin	TX	US	

US-CL-CURRENT: 101/3.1; 355/18

ABSTRACT:

The present invention includes a template comprising a plurality of protrusions and a plurality of recessions with a distance between a zenith of any of the plurality of protrusions and a nadir of any one of the plurality of recessions being less than 250 nm.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw D

☐ 30. Document ID: US 20040163670 A1

L9: Entry 30 of 72 File: PGPB Aug 26, 2004

PGPUB-DOCUMENT-NUMBER: 20040163670
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040163670 A1

TITLE: Apparatus and method for collecting impurities on a semiconductor wafer

PUBLICATION-DATE: August 26, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Ko, Yong-Kyun	Osan-city		KR	
Son, Byung-Woo	Yongin-city		KR	
Jeong, Jong-Cheol	Gyeonggi-do		KR	

US-CL-CURRENT: 134/2; 134/148, 134/153, 134/25.4, 134/34, 134/902

ABSTRACT:

An apparatus for collecting impurities on a semiconductor wafer includes an airtight process chamber, a rotary chuck disposed in the process chamber for rotating and horizontally supporting the semiconductor wafer, a first scanning unit for forming a droplet of a first scanning solution and for scanning an upper surface of the semiconductor wafer rotated by the rotary chuck with the droplet to collect first impurities, a driving unit for tilting the rotary chuck and the semiconductor wafer supported on the rotary chuck, and a second scanning unit for receiving a second scanning solution for collecting second impurities from an edge portion of the semiconductor wafer, the second scanning solution being in contact with the edge portion of the semiconductor wafer tilted by the driving unit and rotated by the rotary chuck so that the second scanning solution scans the edge portion of the semiconductor wafer.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw D

Clear | Generate Collection | Print | Fwd Refs | Bkwd Refs | Generate OACS

Term	Documents
DROPLET	62212
DROPLETS	134980
(8 AND DROPLET).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	72
(L8 AND DROPLET).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	72

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☐ 1. Document ID: US 20040167743 A1

Using default format because multiple data bases are involved.

L4: Entry 1 of 7 File: PGPB Aug 26, 2004

PGPUB-DOCUMENT-NUMBER: 20040167743
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040167743 A1

TITLE: System and method for on-the-fly eccentricity recognition

PUBLICATION-DATE: August 26, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Hosek, Martin	Lowell	MA	US	

US-CL-CURRENT: 702/155; 700/213

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw D

☐ 2. Document ID: US 20040163670 A1

L4: Entry 2 of 7 File: PGPB Aug 26, 2004

PGPUB-DOCUMENT-NUMBER: 20040163670
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040163670 A1

TITLE: Apparatus and method for collecting impurities on a semiconductor wafer

PUBLICATION-DATE: August 26, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Ko, Yong-Kyun	Osan-city		KR	
Son, Byung-Woo	Yongin-city		KR	
Jeong, Jong-Cheol	Gyeonggi-do		KR	

US-CL-CURRENT: 134/2; 134/148, 134/153, 134/25.4, 134/34, 134/902

ABSTRACT:

An apparatus for collecting impurities on a semiconductor wafer includes an airtight process chamber, a rotary chuck disposed in the process chamber for rotating and horizontally supporting the semiconductor wafer, a first scanning unit for forming a droplet of a first scanning solution and for scanning an upper surface of the semiconductor wafer rotated by the rotary chuck with the droplet to collect first impurities, a driving unit for tilting the rotary chuck and the semiconductor wafer supported on the rotary chuck, and a second scanning unit for receiving a second scanning solution for collecting second impurities from an edge portion of the semiconductor wafer, the second scanning solution being in contact with the edge portion of the semiconductor wafer tilted by the driving unit and rotated by the rotary chuck so that the second scanning solution scans the edge portion of the semiconductor wafer.

☐ 3. Document ID: US 6024902 A

L4: Entry 3 of 7 File: USPT Feb 15, 2000

US-PAT-NO: 6024902
DOCUMENT-IDENTIFIER: US 6024902 A

TITLE: Injection molded paired thermoplastic spectacle lenses suited for fully automated dip hardcoating

DATE-ISSUED: February 15, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Maus; Steven M.	Osseo	MN		
Galic; George J.	Columbia Heights	MN		

US-CL-CURRENT: 264/40.5; 264/2.2, 264/2.3

ABSTRACT:

Plastic injection-compression multi-cavity molding of flash-free improved-cleanliness thermoplastic spectacle lenses (16) are suitable to be robotically dip hardcoated. Special spring-loaded (25, 26) molds having variable-volume mold cavities are used in an injection-compression molding process to form, without parting line flash, pairs of a wide range of differing optical power of polycarbonate Rx spectacle lenses (16). These pairs have special molded-on design features which are specially suited for full automation, starting with a novel way for ejection out of the mold into a takeout robot which is integrated via full automation with subsequent dip hardcoating. A molded-on tab with each pair of lenses is specially suited for manipulation by SCARA type robot. This combination produces micro-clean hardcoated paired molded lens made entirely within a single continuous cleanroom air enclosure surrounding the lenses, without any human operators therein, nor requiring any cutting or trimming of the molded paired lens or runner system before hardcoating, nor use of Freon (tm) CFC nor aqueous cleaning protocols before dipcoating.

18 Claims, 16 Drawing figures
Exemplary Claim Number: 1

Number of Drawing Sheets: 8

Full | Title | Citation | Front | Review | Classification | Date | Reference | | | Claims | KWIC | Draw D

☐ 4. Document ID: US 5750156 A

L4: Entry 4 of 7 File: USPT May 12, 1998

US-PAT-NO: 5750156
DOCUMENT-IDENTIFIER: US 5750156 A

TITLE: Apparatus for injection-compression molding and ejecting paired thermoplastic spectacle lens suited for fully automated dip hardcoating

DATE-ISSUED: May 12, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Maus; Steven M.	Osseo	MN		
Galic; George J.	Columbia Heights	MN		

US-CL-CURRENT: 425/139; 264/328.8, 264/334, 425/556, 425/572

ABSTRACT:

Plastic injection-compression multi-cavity molding of flash-free improved-cleanliness thermoplastic spectacle lenses (16) are suitable to be robotically dip hardcoated. Special spring-loaded (25, 26) molds having variable-volume mold cavities are used in an injection-compression molding process to form, without parting line flash, pairs of a wide range of differing optical power of polycarbonate Rx spectacle lenses (16). These pairs have special molded-on design features which are specially suited for full automation, starting with a novel way for ejection out of the mold into a takeout robot which is integrated via full automation with subsequent dip hardcoating. A molded-on tab with each pair of lenses is specially suited for manipulation by SCARA type robot. This combination produces micro-clean hardcoated paired molded lens made entirely within a single continuous cleanroom air enclosure surrounding the lenses, without any human operators therein, nor requiring any cutting or trimming of the molded paired lens or runner system before hardcoating, nor use of Freon (tm) CFC nor aqueous cleaning protocols before dipcoating.

16 Claims, 16 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 8

Full | Title | Citation | Front | Review | Classification | Date | Reference | | | Claims | KWIC | Draw D

☐ 5. Document ID: US 5750060 A

L4: Entry 5 of 7 File: USPT May 12, 1998

US-PAT-NO: 5750060
DOCUMENT-IDENTIFIER: US 5750060 A

TITLE: Method and apparatus for injection compression molding and ejecting paired thermoplastic spectacle lens suited for fully automated dip hardcoating

DATE-ISSUED: May 12, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Maus; Steven M.	Osseo	MN		
Galic; George J.	Columbia Heights	MN		

US-CL-CURRENT: 264/40.5; 264/2.2, 264/2.3, 425/808

ABSTRACT:

Plastic injection-compression multi-cavity molding of flash-free improved-cleanliness thermoplastic spectacle lenses (16) are suitable to be robotically dip hardcoated. Special spring-loaded (25, 26) molds having variable-volume mold cavities are used in an injection-compression molding process to form, without parting line flash, pairs of a wide range of differing optical power of polycarbonate Rx spectacle lenses (16). These pairs have special molded-on design features which are specially suited for full automation, starting with a novel way for ejection out of the mold into a takeout robot which is integrated via full automation with subsequent dip hardcoating. A molded-on tab with each pair of lenses is specially suited for manipulation by SCARA type robot. This combination produces micro-clean hardcoated paired molded lens made entirely within a single continuous cleanroom air enclosure surrounding the lenses, without any human operators therein, nor requiring any cutting or trimming of the molded paired lens or runner system before hardcoating, nor use of Freon (tm) CFC nor aqueous cleaning protocols before dipcoating.

3 Claims, 16 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 8

6. Document ID: US 5718849 A

L4: Entry 6 of 7 File: USPT Feb 17, 1998

US-PAT-NO: 5718849
DOCUMENT-IDENTIFIER: US 5718849 A

TITLE: Method and apparatus for injection-compression molding & ejecting paired thermoplastic spectacle lens suited for fully automated dip hardcoating

DATE-ISSUED: February 17, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY

Maus; Steven M.	Osseo	MN
Galic; George J.	Columbia Heights	MN

US-CL-CURRENT: 264/2.2; 264/2.3, 264/334, 264/335, 425/73, 425/808, 427/164

ABSTRACT:

Plastic injection-compression multi-cavity molding of flash-free improved-cleanliness thermoplastic spectacle lenses are suitable to be robotically dip hardcoated. Special spring-loaded molds having variable-volume mold cavities are used in an injection-compression molding process to form, without parting line flash, pairs of a wide range of differing optical power of polycarbonate Rx spectacle lenses. These pairs have special molded-on design features which are specially suited for full automation, starting with a novel way for ejection out of the mold into a takeout robot which is integrated via full automation with subsequent dip hardcoating. A molded-on tab with each pair of lenses is specially suited for manipulation by SCARA type robot. This combination produces micro-clean hardcoated paired molded lens made entirely within a single continuous cleanroom air enclosure surrounding the lenses, without any human operators therein, nor requiring any cutting or trimming of the molded paired lens or runner system before hardcoating, nor use of Freon (tm) CFC nor aqueous cleaning protocols before dipcoating. An extension of this cleanroom enclosure and robotic handling scheme may optionally provide in-line continuous-product-flow automatic inspection of optical power and lens cosmetic quality, and/or may optionally provide in-line continuous-product-flow anti-reflective thin film vacuum coating, before the molded-and-hardcoated polycarbonate lenses exit out of the continuous cleanroom air enclosure and/or receive any manual handling.

7 Claims, 16 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 8

☐ 7. Document ID: US 4600869 A

L4: Entry 7 of 7 File: USPT Jul 15, 1986

US-PAT-NO: 4600869
DOCUMENT-IDENTIFIER: US 4600869 A

TITLE: Method and device for inputting co-ordinates for robot

DATE-ISSUED: July 15, 1986

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Sekine; Yoshitada	Hoya			JP
Yokota; Fumiki	Yamato			JP

US-CL-CURRENT: 318/568.13; 318/568.16, 318/569, 318/640, 700/182, 700/245, 700/259, 700/88

ABSTRACT:

A method and a device for inputting the coordinates of a robot acts so that the coordinates are input accurately by scanning the working area of the robot and inputting, as coordinates of the working position, positional data when a sensor has detected the working position. A movement data calculator (138) receives target position data from a preteaching data area (146), operates a pulse register (130) and drive circuits (152), (154), (156), and makes the sensor positional data in a position register (130) coincide with the target positional data. It then receives positional vector data from a plane scanning data area (148) and a vertical scanning data area (150) and scans the sensor over the working area. When a detector (526) detects the fact that the sensor has reached the working position, a pulse distributor (11) stops the operation, and the sensor positional data stored in the register (130) is fed to a calculator writer (132) which calculates the positional coordinates of the robot, and writes them into a teaching data storage area (136) in a memory (134).

16 Claims, 14 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 8

Term	Documents
SCANNING	560963
SCANNINGS	2735
(3 AND SCANNING).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	7
(L3 AND SCANNING).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	7

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L1: Entry 1 of 122 File: PGPB Apr 14, 2005

DOCUMENT-IDENTIFIER: US 20050079042 A1
TITLE: Scalar type robot for carrying flat plate-like object, and flat plate-like object processing system

Summary of Invention Paragraph:
[0005] In addition, in Japanese Unexamined Patent Application Publication No. H11-163090, as shown in FIG. 14, yet another mode of SCARA robot has been suggested, whose arm unit 14, although single, comprises three arms, and wherein two finger portions 16 located at a tip portion of the arm unit, arranged at an angle of 120 degrees in-between, are fixed to one wrist portion 15. By this, operations such as an operation of causing one finger portion 16 to transfer the unprocessed wafer while causing the other finger portion to receive the fabricated and processed wafer has been made possible, and accordingly the efficiency of the transferring is improved. In addition, since the arm unit 14 comprises the three arms, there is an advantage that the finger portion 16 is caused to reach farther.

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Generate Collection Print

L1: Entry 4 of 122 File: PGPB Mar 10, 2005

DOCUMENT-IDENTIFIER: US 20050054217 A1
TITLE: Temperature conditioned load lock, lithographic apparatus comprising such a load lock and method of manufacturing a substrate with such a load lock

Detail Description Paragraph:
[0090] Another difference between the first and second embodiment of FIG. 3 and FIG. 4 relates to the transport arrangement. The first embodiment of FIG. 3 comprises one manipulator 19 having a gripper 20, while the second embodiment depicted in FIG. 4 comprises next to the first manipulator 19 a second manipulator 21, also having a gripper 22. Both manipulators are in these embodiments a robot, a SCARA robot, but also other robots or other manipulators are conceivable.

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L1: Entry 2 of 122 File: PGPB Apr 14, 2005

DOCUMENT-IDENTIFIER: US 20050078159 A1
TITLE: Recording method

Detail Description Paragraph:
[0068] The printing substrate 104 is inserted as an optional substrate in the controller (FA personal computer) 100. The printing substrate 104 sequentially fetches data for one line from the N file stored in the controller 100, and sends the data to a head driver 110 in response to the operation of a SCARA robot 121 (relative movement between the printer head and the material to be printed).

Detail Description Paragraph:
[0070] The SCARA robot driver (four axis) 120 drives the SCARA robot 121 in a four-axis manner based on signals from the controller 100. The head driver 110 and the printer head 111 are attached to the SCARA robot 121. In particular, the printer head 111 is mounted at the leading end of an arm of the SCARA robot 121, and the three-dimensional position thereof is controlled arbitrarily so that the distance between the printer head 111 and the printing position is controlled to be constant. The multi-axis pulse-motor driver 130 controls a robot with linear and revolution axes 131 according to signals from the controller 100.

Detail Description Paragraph:
[0073] FIG. 7 is an explanatory view conceptually showing the recording apparatus shown in FIG. 5 in order to explain the operation thereof. A description will be given of the mechanism of the apparatus with particular emphasis on the printer head 111 and the mounting jig 136. The printer head 111 is mounted at the leading end of the arm of the SCARA robot 121 and can be moved in a horizontal direction 1 by a position feedback type servo motor (not shown) disposed in the SCARA robot 121. The aluminum can 140 is mounted by being fitted on the mounting jig 136. The mounting jig 136 is driven by the pulse motor 135 so as to rotate on a center line 2 in a direction of arrow 3. The rotation center line 2 of the mounting jig 136 and a rotation center line 4 of the pulse motor 135 are parallel to each other, and are perpendicular to a bearing mechanism (not shown) of the mounting jig 136 and the mounting surface of the mounting plate 135. The mounting plate 134 can be fixed so as to pivot on a pivot center line 5 perpendicular to the center line 4 in a direction of arrow 6, as described above (see 0 in FIG. 6). While the mounting jig 136 is cylindrical in the example shown in FIG. 7, when it is, for example, conical, the mounting plate 134 is fixed at an angle so that the horizontal lower surface of the printer head 111 serving as an ink ejecting surface and the printing tangent plane of the (tapered) aluminum can 140 are parallel to each other.

L1: Entry 7 of 122 File: PGPB Nov 25, 2004

DOCUMENT-IDENTIFIER: US 20040234359 A1
TITLE: Work-piece treatment system having load lock and buffer

Detail Description Paragraph:
[0031] The first load lock L3 is evacuated by a pump (not shown) to reduce the pressure within the first loadlock. An in-vacuum robot 132' moves an end effector radially into the load lock L3 to remove the untreated work-piece from within the interior of the first loadlock. Unlike the robot 132 depicted in FIGS. 2-4, the robot 132' of FIGS. 5-7 is a radially moving type SCARA robot having two sets of arms. In the FIG. 6 depiction, one set of arms retrieves the workpiece from the load lock L3. The robot 132' pivots to face the workpiece treatment station 134. A second set of arms of the in-vacuum robot 132' removes a treated work-piece from a chuck at the treatment station 134 inside the ion implantation chamber 136. The robot 132' then places the untreated work-piece onto the chuck for beam treatment. The robot rotates to a new orientation and places the treated work-piece it retrieved from the chuck into a second loadlock L1. A controller then pressurizes the second loadlock L1 and the second in air robot 146 removes the treated work-piece from the second loadlock L1 for subsequent transfer back to the FOUP 143 through the buffer 151.

Detail Description Paragraph:
[0034] As a wafer is going into the load lock L1, a second already treated wafer is removed by the robot 146. This transfer can be done in two ways. The load lock L1 can have two wafer trays so that the in air robot 146 can place an untreated wafer on one tray and retrieve an already treated wafer from a second tray. Alternatively, using a SCARA robot 148 such as the robot of FIG. 3, that includes two end effectors, a load lock L1 with a single tray can be used. One effector obtains the treated wafer and the second effector places an untreated wafer onto the now available load lock tray. The load lock L1 is then evacuated by a pump (not shown) to reduce the pressure within the first loadlock.

Detail Description Paragraph:
[0037] As a wafer is going into the load lock L1, a second already treated wafer is removed. This transfer can be done in two ways. The load lock L1 can have two wafer trays so that the in air robot 146 can place an untreated wafer on one tray and retrieve an already treated wafer from a second tray. Alternatively, using a SCARA robot such as the robot of FIG. 3, that includes two end effectors, a load lock L1 with a single tray can be used. One effector obtains a treated wafer and the second effector places an untreated wafer onto the now available (empty) load lock tray. The load lock L1 is then evacuated by a pump (not shown) to reduce the pressure within the first loadlock. An in-vacuum robot 132' rotates one set of arms into the load lock L1 to remove the untreated work-piece from within the interior of the first loadlock. One set of arms retrieves the workpiece from the load lock L1 and a second set of arms of the in-vacuum robot 132' places a treated wafer into the load lock. The robot moves the untreated work-piece to the treatment station. A controller then pressurizes the loadlock L1 and the in air robot 146 removes the treated work-piece from the loadlock L1 for subsequent transfer back to the FOUP 143 through the buffer 151. As discussed above with reference to FIG. 6, each of the end stations shown in FIGS. 5 and 7 have multiple load locks to enhance the efficient throughput of wafers into and out of the treatment station 134.

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1. Document ID: US 20050054217 A1

Using default format because multiple data bases are involved.

L2: Entry 1 of 18 File: PGPB Mar 10, 2005

PGPUB-DOCUMENT-NUMBER: 20050054217
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20050054217 A1

TITLE: Temperature conditioned load lock, lithographic apparatus comprising such a load lock and method of manufacturing a substrate with such a load lock

PUBLICATION-DATE: March 10, 2005

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Klomp, Albert Jan Hendrik	Eindhoven		NL	
Hoogkamp, Jan Frederik	Breda		NL	
Visser, Raimond	Best		NL	
Vugts, Josephus Cornelius Johannes Antonius	Waalwijk		NL	
Marie Vullings, Henricus Johannes Louis	North Ryde		AU	
Kuipers, Leo Wilhelmus Maria	Eindhoven		NL	
Franssen, Johannes Hendrikus Gertrudis	Eersel		NL	

US-CL-CURRENT: 438/795

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De

2. Document ID: US 20040263823 A1

L2: Entry 2 of 18 File: PGPB Dec 30, 2004

PGPUB-DOCUMENT-NUMBER: 20040263823
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040263823 A1

TITLE: Lithographic projection assembly, load lock and method for transferring objects

PUBLICATION-DATE: December 30, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Klomp, Albert Jan Hendrik	Eindhoven		NL	
Hoogkamp, Jan Frederik	Breda		NL	
Vugts, Josephus Cornelius Johannes Antonius	Waalwijk		NL	
Livesey, Robert Gordon	Haywards Heath		GB	
Franssen, Johannes Hendrikus Gertrudis	Eersel		NL	

US-CL-CURRENT: 355/75; 355/53

ABSTRACT:

Lithographic projection assembly, including at least one load lock for transferring objects, in particular substrates, between a first environment and a second environment, the second environment preferably having a lower pressure than the first environment; an object handler including a handler chamber in which the second environment prevails; and a lithographic projection apparatus including a projection chamber. The handler chamber and projection chamber can communicate for transferring the objects. The load lock includes a load lock chamber; evacuation device for evacuating the load lock chamber; and door device for closing the load lock chamber during evacuation and for opening the load lock chamber to enter an object in or remove an object from the load lock chamber. The load lock chamber may be provided with at least two mutually distinct object support positions.

3. Document ID: US 20040234359 A1

L2: Entry 3 of 18 File: PGPB Nov 25, 2004

PGPUB-DOCUMENT-NUMBER: 20040234359
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040234359 A1

TITLE: Work-piece treatment system having load lock and buffer

PUBLICATION-DATE: November 25, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Mitchell, Robert J.	Winchester	MA	US	
Weed, Allan D.	Marblehead	MA	US	
Gueler, Richard	Beverly	MA	US	

US-CL-CURRENT: 414/217

ABSTRACT:

A transfer system for use with a tool for treating a work-piece at sub-atmospheric pressure such as an ion implanter for implanting silicon wafers. An enclosure defines a low pressure region for treatment of work-pieces placed at a work-piece treatment station within the low pressure region. Multiple work-piece isolation

load locks transfer work-pieces, one or two at a time, from a higher pressure region to the lower pressure for treatment and back to said higher pressure subsequent to said treatment. A first robot transfers work-pieces within the low pressure region from the load locks to a treatment station within the low pressure region. Multiple other robots positioned outside the low pressure region transfers work-pieces to and from the multiple work-piece isolation load locks from a source of said work-pieces prior to treatment and to a destination of said work-pieces after said treatment.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw. D

☐ 4. Document ID: US 20040227924 A1

L2: Entry 4 of 18 File: PGPB Nov 18, 2004

PGPUB-DOCUMENT-NUMBER: 20040227924
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040227924 A1

TITLE: Transfer apparatus for transferring an object, lithographic apparatus employing such a transfer apparatus, and method of use thereof

PUBLICATION-DATE: November 18, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Willems Van Dijk, Marcus Johannes Henricus	Uden		NL	
Hennus, Pieter Renaat Maria	Peer		BE	

US-CL-CURRENT: 355/72

ABSTRACT:

The invention relates to a transfer apparatus for transferring an object. The transfer apparatus comprises a gripper for either gripping the object at a first position and then releasing the object at a second position proximate to a receiving structure or releasing the object at a first position after gripping the object at a second position proximate to the receiver structure. The transfer apparatus also includes a measurement device arranged to measure the relative position of the gripper with respect to the receiving structure in at least one dimension. Further, a relative position error is determined with respect to a desired relative position based on the relative position measured. The relative position of the gripper and receiving structure are adjusted in order to minimize the relative position error in the second position.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw. D

☐ 5. Document ID: US 20040218168 A1

L2: Entry 5 of 18 File: PGPB Nov 4, 2004

PGPUB-DOCUMENT-NUMBER: 20040218168
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040218168 A1

TITLE: Lithographic projection assembly, substrate handling apparatus and substrate handling method

PUBLICATION-DATE: November 4, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Van Groos, Pieter Johannes Marius	Geldrop		NL	
Maria Hennus, Pieter Renaat	Peer		BE	
Hoogkamp, Jan Frederik	Breda		NL	
Hendrik Klomp, Albert Jan	Eindhoven		NL	
Onvlee, Johannes	s-Hertogenbosch		NL	
Visser, Raimond	Best		NL	

US-CL-CURRENT: 355/72; 355/53

ABSTRACT:

The invention relates to a lithographic projection assembly, comprising at least two load locks for transferring substrates between a first environment and a second environment, the second environment having a lower pressure than the first environment; a substrate handler comprising a handler chamber in which the second environment prevails; a lithographic projection apparatus comprising a projection chamber.

The handler chamber and the projection chamber communicate via, on the one hand, a load position for entering a substrate from the handler chamber into the projection chamber and, on the other hand, an unload position for removing a substrate from the projection chamber into the handler chamber. The handler chamber is being provided with: pre-processing means for pre-processing of the substrates; and transport means adapted for transferring substrates from the load locks to the pre-processing means and from the pre-processing means to the load position as well as for transferring substrates from the unload position to the load locks.

6. Document ID: US 20040029260 A1

L2: Entry 6 of 18 File: PGPB Feb 12, 2004

PGPUB-DOCUMENT-NUMBER: 20040029260
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040029260 A1

TITLE: Automated system for isolating, amplifying and detecting a target nucleic acid sequence

PUBLICATION-DATE: February 12, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Hansen, Timothy R.	Spring Grove	PA	US	
Collis, Matthew P.	Seven Valleys	PA	US	
Thomas, Bradley S.	Timonium	MD	US	
Fort, Thomas L.	Finksburg	MD	US	

US-CL-CURRENT: 435/287.2; 414/757, 435/6, 435/91.2

ABSTRACT:

A system and method for preparing and testing of targeted nucleic acids is presented. The system integrates a pipetter, extractor, assay reader, and other components, including a selectively compliant articulated robot arm (SCARA). This synergistic integration of previously separate diagnostic tools creates a system and method whereby a minimum of human intervention is required. The resulting system provides a substantially more accurate and precise method of isolating, amplifying and detecting targeted nucleic acids for diagnosing diseases.

☐ 7. Document ID: US 20030188698 A1

L2: Entry 7 of 18 File: PGPB Oct 9, 2003

PGPUB-DOCUMENT-NUMBER: 20030188698
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030188698 A1

TITLE: Robotic apparatus and methods for maintaining stocks of small organisms

PUBLICATION-DATE: October 9, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Donaldson, Jeffrey D.	Tigard	OR	US	
Fisher, William W.	Berkeley	CA	US	
Keller, Douglas O.	Lake Oswego	OR	US	
Swartwood, Troy M.	Tigard	OR	US	

US-CL-CURRENT: 119/678

ABSTRACT:

Robotic apparatus are disclosed for maintaining a collection of stocks of small organisms, such as fruit flies. An exemplary apparatus is capable of performing various tasks, including automatically transferring live flies from a donor container to a recipient container, such as for the purpose of feeding the flies. The apparatus includes an anesthetizing mechanism configured to automatically introduce an anesthetic, such as gaseous CO.sub.2, into a donor container of live flies to temporarily immobilize the flies before the flies are transferred to the

recipient container. The apparatus also includes a gas manifold that is configured to direct a flow of gas from a compressed-gas source into the donor container such that the immobilized flies are blown from the donor container into the recipient container. Also disclosed are automated methods for maintaining a collection of stocks of small organisms, such as fruit flies.

8. Document ID: US 20030127124 A1

L2: Entry 8 of 18 File: PGPB Jul 10, 2003

PGPUB-DOCUMENT-NUMBER: 20030127124
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030127124 A1

TITLE: Solar cell stringing machine

PUBLICATION-DATE: July 10, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Jones, Bernard D.	Amherst	NH	US	
Rivera, Eric de	W. Boylston	MA	US	
Hariharan, Alleppey V.	Nashua	NH	US	
Slavsky, Steven T.	Natick	MA	US	
McGee, Thomas S.	Concord	NH	US	
Lackey, David W.	Concord	NH	US	
Kirchner, Thomas N.	Londonderry	NH	US	

US-CL-CURRENT: 136/244; 438/80

ABSTRACT:

A machine for the automated assembly of wafers such as solar cells into strings, comprising a control system, a cell loader with wafer inspection station, a cell tab loader, a string assembly station, and a platen with adjacent pairs of individual cell, opposing edge grippers having multiple sets of vertically operable pincer action fingers for holding cells in string alignment during soldering. The string assembly station has a cooperating cell support and tab tail support mechanism providing for a tab tail hand off from one to the other with a platen indexing movements of cell pitch distance. The platen moves from the string assembly station through a soldering station consisting of a preheat, soldering, and cooling zones spaced a cell pitch distance apart. A string unloader moves completed strings through a string inspection station placing strings in a good or bad string holding area.

☐ 9. Document ID: US 20020060210 A1

L2: Entry 9 of 18 File: PGPB May 23, 2002

PGPUB-DOCUMENT-NUMBER: 20020060210
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020060210 A1

TITLE: Laser cutting method, laser cutting apparatus, and method and apparatus for manufacturing liquid crystal device

PUBLICATION-DATE: May 23, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Terada, Shoichi	Kumamoto-shi		JP	
Yoshimura, Kazuto	Suwa-shi		JP	
Masuda, Kenji	Hata-Machi		JP	
Ito, Hidehiro	Matsumoto-shi		JP	

US-CL-CURRENT: 219/121.76; 219/121.67

ABSTRACT:

Scribe lines are formed in advance at cutting locations on both surfaces of a panel formed by bonding an upper substrate and a lower substrate to each other via a sealing material, and a laser beam is applied to each of the scribe lines on both surfaces, by which a liquid crystal panel having a product sized is obtained.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw D

☐ 10. Document ID: US 20010055069 A1

L2: Entry 10 of 18 File: PGPB Dec 27, 2001

PGPUB-DOCUMENT-NUMBER: 20010055069
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20010055069 A1

TITLE: One camera system for component to substrate registration

PUBLICATION-DATE: December 27, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Hudson, Edison T.	Chapel Hill	NC	US	

US-CL-CURRENT: 348/302; 348/207.99

ABSTRACT:

A machine vision camera observes components to be placed at a selected location on a substrate from a given angle relative to the orthogonal to the substrate through a mirror and then observes the selected location on the substrate from the same angle but with the mirror displaced in order to measure, register and align underside contact and edge features of the component to corresponding substrate features. The camera moves with the pick-up head of a placement machine that picks up the component from a component feeder or component store and transports it to a location above a mirror where its bottom surface and edges are imaged as it is held stationary. The mirror may be carried with the pick-up head and may be retractable. Component feature coordinate locations are calculated and used to calculate the coordinates of the component features relative to the pick-up head. The selected location of the substrate is imaged by the same camera but with the intervening mirror displaced and coordinates for features corresponding to those of the component features are obtained in a similar fashion. A difference vector is then calculated to determine how the pick-up head should be moved (excluding the Z- or vertical direction) so that the corresponding component and target substrate features are brought into physical contact. Additionally, an iterative alignment of component to substrate significantly improves alignment accuracy beyond the dead reckoning accuracy of the placement machine's mechanics. Finally, the component is moved in the Z-direction to bring it into contact with the substrate.

Term	Documents
SCANNING	560963
SCANNINGS	2735
(1 AND SCANNING).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	18
(L1 AND SCANNING).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	18